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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/552,903	10/02/2006	Jun-Sik Kim	AB-1529 US	6914
32605	7590	10/23/2009		
Haynes and Boone, LLP IP Section 2323 Victory Avenue SUITE 700 Dallas, TX 75219			EXAMINER SHERMAN, STEPHEN G	
			ART UNIT 2629	PAPER NUMBER
			MAIL DATE 10/23/2009	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/552,903

**Applicant(s)**

KIM ET AL.

**Examiner**

STEPHEN G. SHERMAN

**Art Unit**

2629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 September 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) 16-32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 October 2005 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/S508)  
Paper No(s)/Mail Date 10/12/2005
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

1. This Office Action is in response to the response filed 22 September 2009. Claims 1-32 are pending, of which claim 16-32 are withdrawn from consideration.

***Election/Restrictions***

2. Claims 16-32 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 22 September 2009.

***Priority***

3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Information Disclosure Statement***

4. The information disclosure statement (IDS) submitted on 12 October 2005 is being considered by the examiner.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 4, 7, 8 and 13-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Thrower (US 4,857,914).

***Regarding claim 1***, Thrower discloses an information input apparatus whose key arrangement is variable (Figure 1), comprising:

a key display section for displaying elements of a key image of a matrix shape (Figure 1, 3);

a key input section for receiving information of a corresponding key at a predetermined location of the key image displayed on the key display section (Figure 1, 1); and

an input controller (Figure 1, elements 5-11.) for generating an image of predetermined key arrangement selected among a plurality of key images in which numeric keys are shift-arranged so that there is no crossing in an neighboring numeral traffic line (Figures 2a-2d and column 3, lines 1-8), providing the generated image to the key display section (Figures 2a-2d and column 2, line 63 to column 3, line 19.), and

converting the information inputted through the key input section into an actual key value based on the predetermined key arrangement (Column 3, lines 9-28).

***Regarding claim 4,*** Thrower discloses the information input apparatus as claimed in claim 1, wherein the input controller further comprises a user input section, and displays the key image of the predetermined arrangement type on the key display section based on the signal inputted through the user input section (Figure 1 and column 3, lines 9-28 [interface 5] where coder 7 converts output from counter 6 [A] to display a new pattern through driver 8.).

***Regarding claim 7,*** Thrower discloses the information input apparatus as claimed in claim 1, wherein the key arrangement includes non-numeric keys that are shift-arranged along with the numeric keys (Figures 2a-2d).

***Regarding claim 8,*** Thrower discloses the information input apparatus as claimed in claim 1, wherein the key arrangement comprises a plurality of non-numeric keys having one side fixed to a predetermined location and the other randomly arranged (Column 3, lines 43-48 and Figures 2a-2d show that the keys have one side fixed to a column location and the other side randomly arranged to a row position.).

***Regarding claim 13,*** Thrower discloses a method for controlling an information input apparatus of variable key arrangement, wherein the information input apparatus

includes a key display section for displaying a key image of a matrix shape and a key input section for receiving information of a corresponding key at a predetermined location of the key image displayed on the key display section (Figure 1), comprising the steps of:

displaying, an image of predetermined key arrangement selected among a plurality of key images in which numeric keys are shift-arranged so that there is no crossing in an neighboring numeral traffic line, on the key display section, and then waiting for a user's key input (Figures 2a-2d and column 2, line 63 to column 3, line 28); and

decrypting the information inputted through the key input section as an actual key value based on the predetermined key arrangement (Column 3, lines 9-13 and 19-28).

**Regarding claim 14**, Thrower discloses the method as claimed in claim 13, further comprising the step of selecting an image of other key arrangement if the user chooses to change the key arrangement (Column 3, lines 1-28, where the key arrangement is changed when a user chooses/presses a key, thus the arrangement is changed when a user chooses to change the arrangement.).

**Regarding claim 15**, Thrower discloses the method as claimed in claim 13, further comprising the step of selecting an image of other key arrangement every key input of a predetermined number of times (Column 3, lines 1-28).

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thrower (US 4,857,914) in view of Kitajima et al. (JP 2001-228970 A).

***Regarding claim 2***, Thrower discloses the information input apparatus as claimed in claim 1.

Thrower fails to explicitly teach the information input apparatus further comprising an ambient light shielding filter attached to the front of the key display section.

Kitajima et al. disclose an information input apparatus comprising an ambient light shielding filter attached to the front of a key display section (Drawings 2 and 3 and paragraphs [0027]-[0033].).

Therefore, it would have been obvious to "one of ordinary skill" in the art at time the invention was made to use the ambient light shielding filter taught by Kitajima et al. on the front of the key display section taught by Thrower in order to regulate the viewing of the keyboard panel (See paragraph [0045] of Kitajima et al.).

***Regarding claim 3***, Thrower and Kitajima et al. disclose the information input apparatus as claimed in claim 2.

Kitajima et al. also disclose wherein the ambient light shielding filter is an orthogonal two-fold shielding filter (Drawings 2 and 3 and paragraphs [0027]-[0033].).

10. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Thrower (US 4,857,914) in view of Okada (JP 2002-032176 A).

***Regarding claim 5***, Thrower discloses the information input apparatus as claimed in claim 1.

Thrower fails to teach wherein the matrix elements are shifted in a direction moving from a left upper portion of the keypad to a right lower portion of the keypad.

Okada discloses of an information input apparatus wherein matrix elements are shifted in a direction moving from a left upper portion of the keypad to a right lower



portion of the keypad (Drawings 1 and 2, where drawing 2 shows the different arrangements, where (1) show the numbers "1" and "2" to be in the left upper portion, where the number are shifted and by (5) the numbers "1" and "2" are in the right lower portion of the keypad.).

Therefore, since Thrower and Okada each disclose of shifting the matrix elements on a keypad, it would have been obvious to "one of ordinary skill" in the art at the time the invention was made to substitute one method of arranging with the other in order to achieve the predictable result of shifting the matrix elements on a keypad.

11. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Thrower (US 4,857,914) in view of McIntyre et al. (US 6,549,194).

***Regarding claim 6***, Thrower discloses the information input apparatus as claimed in claim 1.

Thrower fails to teach wherein the key arrangement includes non-numeric keys whose location is all fixed.

McIntyre et al. disclose of an information input apparatus with a variable key arrangement, wherein the key arrangement includes non-numeric keys whose location is all fixed (Figures 3a-3c).

Therefore, since Thrower and McIntyre et al. each disclose of variable key arrangements, it would have been obvious to "one of ordinary skill" in the art at the time

the invention was made to substitute one method of arranging with the other in order to achieve the predictable result of providing variable key arrangements.

12. Claims 9 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thrower (US 4,857,914) in view of Maddalozzo, Jr. et al. (US 6,434,702).

**Regarding claim 9**, Thrower discloses the information input apparatus as claimed in claim 1.

Thrower fails to teach wherein the key arrangement comprises non-numeric keys all of which are randomly arranged.

Maddalozzo, Jr. et al. disclose of an information input apparatus wherein a key arrangement comprises non-numeric keys all of which are randomly arranged (Figures 1 and 2).

Therefore, since Thrower and Maddalozzo, Jr. et al. each disclose of variable key arrangements, it would have been obvious to "one of ordinary skill" in the art at the time the invention was made to substitute one method of arranging with the other in order to achieve the predictable result of providing variable key arrangements.

**Regarding claim 12**, Thrower discloses the information input apparatus as claimed in claim 1.

Thrower fails to teach wherein multiple character keys are allocated to the numeric keys.

Maddalozzo, Jr. et al. disclose of an information input apparatus wherein multiple character keys are allocated to the numeric keys (Figure 2).

Therefore, since Thrower and Maddalozzo, Jr. et al. each disclose of variable key arrangements, it would have been obvious to "one of ordinary skill" in the art at the time the invention was made to substitute one method of arranging with the other in order to achieve the predictable result of providing variable key arrangements.

13. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Thrower (US 4,857,914) in view of Sasaki (JP 2002-358153 A).

***Regarding claim 10***, Thrower discloses the information input apparatus as claimed in claim 1.

Thrower fails to teach wherein the key arrangement comprises numeric keys and non-numeric keys, the numeric keys experience a square rotary shift in the clockwise or counterclockwise direction, and the starting point of the numeric keys is arbitrarily selected.

Sasaki discloses an information input apparatus wherein a key arrangement comprises numeric keys and non-numeric keys, the numeric keys experience a square rotary shift in the clockwise or counterclockwise direction, and the starting point of the numeric keys is arbitrarily selected (Drawings 4a and 4b).

Therefore, since Thrower and Sasaki each disclose of variable key arrangements, it would have been obvious to "one of ordinary skill" in the art at the time

the invention was made to substitute one method of arranging with the other in order to achieve the predictable result of providing variable key arrangements.

14. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Thrower (US 4,857,914) in view of Sasaki (JP 2002-358153 A) and further in view of ().

***Regarding claim 11***, Thrower and Sasaki disclose the information input apparatus as claimed in claim 10.

Thrower and Sasaki fail to explicitly teach wherein the non-numeric keys are fixed at the center.

Habu discloses an information input apparatus wherein non-numeric keys are fixed at the center (Figures 1 and 2).

Therefore, since the combination of Thrower and Sasaki, and Habu each disclose of key arrangements, it would have been obvious to "one of ordinary skill" in the art at the time the invention was made to substitute one arrangement with the other in order to achieve the predictable result of providing key arrangements.

### ***Conclusion***

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to STEPHEN G. SHERMAN whose telephone number is (571)272-2941. The examiner can normally be reached on M-F, 8:00 a.m. - 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on (571) 272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Stephen G Sherman/  
Examiner, Art Unit 2629

20 October 2009